

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 43

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALFRED MOSER, GEORG PRSKAWETZ,  
AND PETER POINTER

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Appeal No. 1999-0978  
Application No. 08/533,944

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HEARD: October 10, 2001

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Before KIMLIN, KRATZ, and TIMM, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

***DECISION ON APPEAL***

Applicants appeal the decision of the Primary Examiner finally rejecting claims 6-10, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C.

§ 134.

### ***THE INVENTION***

According to Appellants, the invention relates to a process of thermally treating a rail head to obtain a fine-pearlite structure while avoiding undesirable hardness of the thinner web portion of the rail (Brief, page 2). Claim 6 is illustrative:

6. A method for the thermal treatment of a rail head of a rail in which cooling is carried out, comprising:  
immersing said rail head at an initial temperature of above 720EC in a cooling agent that contains a synthetic cooling agent additive, and withdrawing said rail head from the cooling agent upon obtaining a surface temperature of said rail head of between 450 to 550EC without temperature equalization over the entire cross-section of said rail head.

### ***THE EVIDENCE***

As evidence of unpatentability, the Examiner relies upon the following prior art references:

Iwasaki et al. (Iwasaki) <sup>1</sup> (published Japanese Pat. Application)	55-2768	Jan. 10, 1980
Moser et al. (Moser) (Canadian Patent)	1,205,729	Jun. 10, 1986
Teramoto et al. (Teramoto) (published Japanese Pat. Application)	1-290717	Nov. 22, 1989

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<sup>1</sup>Unless otherwise noted, references to this document are to the English language translation provided by The Ralph McElroy Translation Company. The Examiner obtained the translation in November 1998, a date after the Brief and Answer had been written. As Appellants' representative informed us at the oral hearing that a copy of this translation had not yet been received, a copy accompanies this decision.

### ***THE REJECTION***

Claims 6, 7 and 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Iwasaki and Moser. Teramoto is additionally applied to reject claims 8 and 10. We reverse for the reasons that follow.

### ***OPINION***

The Examiner bears the initial burden of presenting a *prima facie* case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). It is incumbent on the Examiner to gather all of the necessary facts and present them on the written record in a way that adequately supports a *prima facie* case of unpatentability. Furthermore, the Examiner must first correctly construe the claims before endeavoring to compare the subject matter of the claims with the prior art in support of a conclusion of obviousness. The Examiner here has both overlooked an important disputed limitation present in claim 6, the independent claim, and failed to present evidence or reasoning, supported by the evidence of record, tending to show that the subject matter of the claim as a whole, including that limitation, would have been obvious to one of ordinary skill in the art at the time of invention.

Claim 6, the independent claim, is directed to a process in which a hot rail head (rail head at an initial temperature above 720 °C) is immersed in a cooling agent (a liquid bath; specification, page 3,

lines 5-13; page 6, line 24 to page 7, line 5) containing synthetic cooling agent additive. Claim 6 requires a step of “withdrawing said rail head from the cooling agent upon obtaining a surface temperature of said rail head of between 450 and 550 °C.” In other words, the surface temperature of the rail head within the bath is used as a criterion for the timeliness of the removal (specification, page 2). The removal occurs “upon obtaining” a particular surface temperature within the specified range and, therefore, the claim excludes holding the rail head within the cooling agent while holding the temperature constant at any value within that range.

The Examiner has failed to adequately explain how the combination of Iwasaki and Moser teaches or suggests a process as claimed including the withdrawing step. The Examiner states that Iwasaki does not describe a step of withdrawing the rail from the cooling agent before temperature equalization over an entire cross-section of the rail head (Answer, page 4). The Examiner then relies on several comparisons between the figures of Iwasaki and those of the application as evidence that temperature equalization over an entire cross-section of the rail is not reached in the process of Iwasaki (Answer, pages 4 and 6-8). However, the Examiner has not addressed the issue of when the rail head is removed from the cooling agent.

The withdrawing step requires that removal occur before the isothermal transformation step of Iwasaki. However, it is unclear whether the rail head remains in the cooling agent during isothermal transformation on the present record. Iwasaki does not describe how the rail is held at isothermal

temperature, merely referring to methods proposed in other Japanese patent applications (page 12, lines 11-15) which have not been relied upon by the Examiner. Iwasaki does refer to the transformation temperature as a “cooling stop temperature” (page 11, lines 2-3), but the intent is to hold the temperature constant not necessarily stop cooling agent application. Appellants argue that the lack of temperature increase between 5-15 seconds in the Figure 1 transformation profile of Iwasaki supports the assertion that the rail remains in the cooling bath during isothermal transformation (Reply Brief, pages 5-6). We would not go that far. However, that is one possible scenario. Suffice it to say that the Examiner has not provided a supported explanation of what, in fact, Iwasaki contemplated with respect to the means used for isothermal transformation. We note that Iwasaki indicates that the two Japanese Patent Applications referred to by Iwasaki on page 12, lines 13-14 discuss the means for isothermal transformation. Yet fact finding with regard to these Japanese Applications is absent from the record.

The Examiner has also failed to appreciate, presumably due to the lack of a timely translation, that Iwasaki uses an entirely different heating method than the present invention. Instead of the entire rail being heated, Iwasaki heats only the surface of the rail to at least a prescribed depth up to the austenite (translation page 12, lines 3-9). Iwasaki then cools this heated surface using a mist or air coolant and holds the surface being treated at an isothermal temperature for, possibly, 5 minutes or more (page 12, lines 9-17). The non-uniformity in hardness is not, in this case, an indication that the rail

head is removed from the cooling agent upon obtaining a specified temperature in the range of 450-550 °C. While Iwasaki indicates that the cooling stop temperature shows a strong correlation with hardness, it is only one factor (page 11, lines 21-23). The initial differential heating, differences in composition, and differences in cooling agent have not been accounted for by the Examiner.

The Examiner does not make any finding of fact that Moser describes or suggests removing the rail head from the cooling agent upon obtaining a particular temperature within the range of 450-550 °C. Because the Examiner has failed to provide evidence to the contrary, we agree with Appellants that an essential limitation recited in claim 6 is missing from the reference combination (Brief, page 7).

Iwasaki uses a mist or air cooling agent and therefore does not “immerse” the rail head as recited in claim 6. The Examiner relied upon Moser as evidence that cooling a rail head in a cooling agent containing water and synthetic cooling medium additive was conventional and a recognized equivalent to the cooling method of Iwasaki. Moser utilizes rolling heat and therefore is hot throughout the rail at the start of the cooling process (page 2, lines 33-36). In view of the fact that, in Iwasaki, only the surface of the rail head is heated, it is not clear that one of ordinary skill in the art would have substituted a bath for the mist or air of Iwasaki. We note that the overlap in cooling rates described by the two references is not meaningful in light of the different heat profiles. The use of the same cooling agent system would result in a faster cooling rate in a surface only heated rail than in a entirely hot rail.

We agree with the Appellants that the Examiner has failed to establish that the combined references, alone or in combination, describe or suggest the removal of the rail head from a cooling bath upon obtaining a temperature of between 450 and 600 °C (Brief, page 7). To establish a *prima facie* case of obviousness, the Examiner must show some objective teaching in the prior art or otherwise provide a basis to believe that knowledge generally available to those of ordinary skill in the art would have lead those artisans “to make the specific combination that was made by the applicant.” *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In the present case, such evidence is lacking. Therefore, we conclude that the Examiner has failed to establish a *prima facie* case of obviousness with respect to the subject matter of claims 6-10.

***CONCLUSION***

To summarize, the decision of the Examiner to reject claims 6-10 under 35 U.S.C. § 103 is reversed.

REVERSED

EDWARD C. KIMLIN  
Administrative Patent Judge

PETER F. KRATZ  
Administrative Patent Judge

CATHERINE TIMM  
Administrative Patent Judge

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APPEAL NO. 1999-0978 - JUDGE TIMM  
APPLICATION NO. 08/533,944

APJ TIMM

APJ KRATZ

APJ

DECISION: **REVERSED**

Prepared By:

**DRAFT TYPED:** 19 Jul 02

**FINAL TYPED:**